Report of the Computer Standards Committee to CSAC, ITSD, and the Users

John Staples, for the Committee

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Charge to the Committee

- Standarization of desktop configurations facilitates higher quality offerings and support to LBNL scientists and administrators
- ITSD provides a set of “lifeline” services
  - e-mail, calendar, administrative applications, etc.
- Cyberprotection is a must
- The CSC committee is asked to:
  - Gather facts about the desktop environment
  - Identify issues that result from disussions of the findings that point to the resolution of problems
  - Make recommendations to users and management
- The scope of discussions includes all computers used in day-to-day activities. Excluded are servers and real-time applications.

The CSC Partners

- Committee members
  - John Staples (AFRD), chair, Paul Barale (Engineering), recording secretary, Chuck Axthelm (ASD), Alessandra Ciocio (Physics), Ron Huesman (LSD), Rich Nosek (ITSD), Denis Peterson (ASD), Mark Rosenberg (ITSD), Eli Rotenberg (ALS), Charlie Verboom (ITSD), Jeff Willer(ITSD)
- Presenters to the Committee
  - Gary Jung (ITSD), Jeff Willer(ITSD), John Staples (AFRD), Rich Nosek (ITSD), Rosemary Evanoff (ITSD), Ted Sopher (ITSD), Keith Olson (Mac User's Group), Charlie Verboom (ITSD), Mark Rosenberg (ITSD)
- Support Personnel
  - Heather Pinto (Administrative Assistant)
  - Jon Bashor (Editor), John Hules (Backup Editor)

Establishing a Set of Standards

- Standards should point the way to higher quality offering and support
- A minimum infrastructure is necessary under fixed overhead and recharge rates
  - The so-called “lifeline” services, such as e-mail, calendar, 5 others
- Some reasonable level of standards will increase efficiency, thereby quality, of services
- Strict application of standards would be counter-productive
  - Our workplace requirements are so diverse
  - Some benefit to be in front of current technology
  - Licensing issues are changing

Focus

- The focus of the committee is standards, not changing the way ITSD goes about its business.
- Many ITSD services are of the highest quality and are recognized as such: these areas are already well administered and need no further input from CSC.

The Audience

- We address two audiences:
  - ITSD itself [I]
  - The users [U]
- ITSD must supply a basic infrastructure (the “lifeline” services). In addition, it supplies many other services from purchasing support through several standard configurations, help desk support, networking services, and T&M support in many different areas.
- The users must also show responsibility in several areas, especially with the emergence of laptops, wireless networking, security threats and the popularization of open-source software.

The Process

- The CSC comprises a nearly equal set of users from various scientific divisions and computer service professionals from ITSD.
- The committee did not start with a list of pre-defined areas of investigation (topics), but derived the topics over a series of discussions and from input from invited expert speakers that seemed most appropriate.
- We do not claim that we have covered all possible areas of inquiry.
- These recommendations are suggestions, to be evaluated by CSAC, ITSD, and the user community for implementation.

Evolution of LBNL Computing

- In the past
  - Major incompatibilities existed between different desktop configurations: Pcs, Macs and UNIX boxes
  - Lab on-line services were offered as a client-server model
  - Computing power was centralized
- Now:
  - Inter-platform file format incompatibilities is easing
  - Migration to web-based model: browsers are now the issue, not the platform.
  - Computing is distributed
- Almost everything the computer center used to offer has now migrated to the users: printing, CPU cycles, purchasing, etc.
- ITSD maintains a basic infractructure.

Major Themes

- Browsers, not platform, are now the key issue.
- Browser support is now market-driven
  - Internet Explorer (IE) has eclipsed Netscape (NS)
  - Netscape has been the default standard at LBNL
  - ITSD must now support IE applications
- The Committee has identified seven critical “Lifeline” infrastructure and business applications that must be available across all platforms for most users
  - e-mail, Calendaring, LETS
  - Pcard, IRIS, Employee self-help
  - Asset Management

Major Themes – 2

- To lower the cost to customers, Basic Ordering Agreements (BOAs) and the use of Pcard should be extended to Linux and Mac purchases.
  - BOAs now account for less than 1/3 of computers purchased
- Computers purchased by BOAs should be accompanied by provisions for maintenance, especially for high-volume purchases.
- Waivers for the purchase of non-standard configurations should acknowledge that the support will be less {rapid, inexpensive}, and be agreed to in writing by the purchaser and user.
- Proliferation of UNIX/Linux require users to be responsible for cybersecurity, either through training or by designating a trained system administrator.

Major Themes – 3

- PDAs are becoming popular and software issues must be addressed: security and synchronization
- Responsibility for insuring data safety through backup and archiving must be made visible to the PI or line manager.
- Tools used to deploy enterprise software solutions should be standardized around a set of available tools used by both ITSD and other software developers to promote inter-platform compatibility and software maintenance.
- Quality of open-source software is now excellent and basic office packages (Star/OpenOffice, for example) should be considered for ITSD support.
- Standard file formats should be encouraged, particularly for inter-lab exchange: P2R (now PRD) document, for example.

The Twelve Topics

- “Lifeline” Business Applications
- Browsers
- Standard Web Development Tools
- Document Interchange
- Open Source Software
- Procurement Assistance
- Desktop Hardware and Software Support
- Macintosh Support
- Scientific Workstation Support (UNIX/Linux)
- Backups and Archiving
- Informal Centers of Excellence
- Laptops and PDAs

Details

- Each topic contains:
  - Findings
  - Issues
  - Recommendations
- The recommendations are aimed at ITSD [I], the users [U], or both [I,U].

Corporate and “Lifeline” Business Apps

- Definition of Lifeline applications
  - e-mail
  - Calendaring
  - LETS
  - IRIS
  - Pcard
  - Asset Management
  - Human Resources self-services

Corporate – continued

- Findings
  - Currently most institutional information is based on client-server, supported mostly on PCs, not Macs, UNIX or Linux.
  - IRIS is web-based, but runs only on Netscape
  - Shift from client-server to web-based model will take place over the next few years
  - IE will be support web-based applications far better than Netscape
  - IE is now on Macs (OS X), but not UNIX/Linux
  - The future of Netscape is not clear
- Recommendations
  - Develop and deploy major business apps for both NS and IE [I]
  - Strive to make all lifeline apps run on all platforms [I]

Web Browsers

- Findings
  - IE now has about 90% penetration (in commercial world), and Windows is the overwhelming majority OS on the Web.
  - Standard LBNL browser is Netscape, The LBNL mail system based on Netscape products. Some incompatibilities with Internet Explorer.
- Issues
  - The browser, not the platform, is the issue
  - Market-driven web design software optimized for IE, not Netscape
  - IE not identical on all platforms
- Recommendations
  - Add IE to supported browser list [I]
  - Support a mail client that will support IE as a default browser [I]
  - Continue to support Netscape for lifeline applications [I]

Standard Web Development Tools

- Findings
  - LBNL-supplied services are migrating from client-server to web-based.
  - Now, a wide range of web app development tools are used by ITSD/TEID.
- Issues
  - LBNL has not standarized on a standard desktop database model.
  - Nor on standard software development technology for large-scale projects.
  - Cross-platform compatibility critical for code migration and maintenance
- Recommendations – all for the near future (highly time-dependent)
  - Dreamweaver for static web page, JSP/Java for dynamic web pages [I]
  - Rational Rose for large-scale software, Oracle for date-base [I]
  - (more in detailed report) [I,U]

Document Interchange

- Findings
  - Various file formats are found, even in e-mail attachments
  - There is no standard word processor, browser or e-mail client at LBNL.
  - Administrative memos need to be readable on any supported platform
  - Interactive documents (PRDs, e.g.) need to be editable
  - The “de facto” word processing application is Microsoft Word
    - Many versions are in use at LBNL, with incompatibilities
    - Word is not available for UNIX/Linux platforms
    - This locks us into a single vendor, with evolving licensing policy
    - The file format is proprietary, and single-vendor
- Issues
  - Other approaches merit investigation, such as Open/StarOffice

Document Interchange Recommendations

- For read-only documents, use PDF or simple HTML [U]
- For editable (read-write) documents
  - Use simple formats, such as .txt, .rtf, .doc, .xls, .ppt, .dwg [U]
  - Test cross-platform performance for critical documents [I,U]
  - Investigate document translation tools, make available [I,U]
    - Translators between verions of Word
    - Investigate Open/StarOffice
- Identify or establish an LBNL resource for translation of non-standard document types to standard format [I,U]
- Standard LBNL documents need to be cross-platform compatible and reasonable to use [I,U]
- Evaluate open source document formats (XML, for example) for future document interchange [I,U]

Open Source Software

- Findings
  - Cost of commercial products increasing, upgrades for Office eliminated through software maintenance contracts (Software Assurance).
  - Open source products free or low cost, through Gnu Public License, which assures open software and file formats.
  - Star/OpenOffice now available that has most of the capability of Microsoft Office. Ported to PCs and Linux. (Macs to follow.)
  - StarOffice will achieve significant market penetration (Gartner)
  - Open-source browsers continue to improve.
- Issues
  - Our diverse computing makeup may be-well served by open-source applications.
- Recommendation
  - Investigate the support of Open/StarOffice as an LBNL standard. [I]

Procurement Assistance

- Findings
  - BOAs can streamline procurement process, but less than 1/3rd of computers are purchased this way. This restrictive approach affects support, system cost and productivity.
  - LLNL has a purchasing agreement with a commercial reseller of Mac and Dell equipment, who provides on-site warranty service.
- Recommendations
  - Continue BOAs for standard PC, which can be Linux [I]
  - Develop BOA for Mac desktops and laptops [I]
  - Extend Pcard privileges for all BOAs to facilitate purchases [I]
  - Promote group SW licensing for commonly used products [I]
  - Streamline waiver process so user knows support limitations [I]
  - Users review waiver release of limitations of standard support [U]

Desktop HW and SW Support

- Findings
  - Help Desk and Computer Infrastructure Support (CIS) is very PC-centric – about 85% of the effort. The Mac/PC Support Group (MPSG) has 5 FTEs, one is a Mac expert.
  - For economy of scale, there is a need to standardize around one PC model. Not true for Macs, with more homogeniety.
  - UNIX market will consolidate on Sun Solaris and Linux. Fewer UNIX/Linux systems are being installed by CIS, as Linux is becoming an easier user-install.
- Issues
  - It is not economical to maintain on-site support for hardware not in common use.
  - Some brands (printers, e.g.) are very expensive to maintain

Desktop HW and SW Support – cont

- Recommendations
  - Provide Lifeline maintenance for equipment acquired via a BOA initiated by ITSD. [I]
    - In-house high-volume equipment (PCs, Macs)
    - Outsource as needed to off-site vendors: HP printers and possibly Macs
    - Solicit vendors who can provide on-site warranty support at no charge to user
  - Develop and maintain a buyers guide for recommended printers and provide lifeline service [I]
  - Provide Help Desk assistance for standard software. [I]
  - Continue to develop the LBNL software download site for licensed and security software. [I]

Mac Support

- Findings
  - Significant Mac population and active Mac Users Group at LBNL
  - Mac supports IE, lessening platform-specific web-based problems
  - OS-X, based on FreeBSD, is an alternative open-source platform
- Issues
  - No BOA for volume purchases.
  - Need to address “standard maintenance” for Macs
  - New backup system – Veritas – coming on line, includes Macs,
  - Alternatives to Microsoft Office may be coming
- Recommendations
  - Distributed over other topics listed, including browsers, procurement, corporate business apps, SW support, backups and support groups.

Scientific Workstations (UNIX/Linux)

- Findings
  - Linux has a growing user base at LBNL, many replacing Windows.
  - Mac OS X is emerging as another UNIX-type of OS
- Issues
  - With no standard, diversity of Linux boxes will be large and difficult to maintain efficiently.
  - UID/GID registration should be coordinated for interoperability.
  - Increasing number of untrained users who have root priviledge.
- Recommendations
  - Create a standard Linux load [I]
  - Provide centralized Linux support [I]
  - Maintain a central UID/GID namespace, required for new users [I,U]
  - Require qualified sys admin for all Linux systems [U]

Backups and Archiving

- Findings
  - Several years ago, three separate BU systems existed and were then consolidated into Legato. Now, Veritas is coming on-line for all platforms with lower cost and higher efficiency.
- Issues
  - For Veritas to be successful, a large fraction of LBNL must be enrolled.
  - No archiving service is presently provided.
- Recommendations
  - Promote and advertise LBNL policy on backups. Each PI or line manager must actively determine BU policy for each project [I,U]
  - All platforms must be included (happening) [I]
  - Retrieval must be easy and user-driven [I]
  - Investigate a data archiving service [I]

Informal Centers of Excellence

- Findings
  - Some specialized software products are commonly used, such as LabView, SAS and AutoCAD.
  - These informal centers of knowledge may be of assistance to new users.
  - Some users groups (MUG, LUG) are also a valuable knowledge resource.
- Issues
  - ITSD cannot be expert on everything. If other expertise exists within LBNL, it should be made use of.
- Recommendations
  - Sponsor and/or participate in key users groups. [I]
  - Ensure the Help Desk is aware and can redirect questions [I]
  - User groups register with Help Desk so referrals can be made. [U]

Laptops and PDAs

- Findings
  - Laptops and PDAs are becoming more powerful and ubiquitous
  - No LBNL information resource on Laptop/PDA purchase exists.
- Issues
  - Integration of Laptops/PDAs into LBNL infrastructure crucial
  - Laptops often used with AV equipment for presentations
- Recommendations
  - Provide buying advice: reliability, compatibility, configurations. [I]
  - Users encouraged to provide feedback for a database [U]
  - Continue to provide a BOA for laptop procurement [I]
  - Recommend that a standard for PDAs be developed [I]

ITSD Areas of Excellence

- ITSD currently provides high-quality support in a number of areas.
  - Some areas, such as security, networking, e-mail are excellently managed by experts and the CSC does not recommend any fundamental changes in these areas.
  - Some areas, such as wireless networking, are in the process of establishing policy, and CSC recognizes this as an evolutionary process already handled by experts.
  - CSC makes some support and training recommendations in the areas of security and e-mail.

Security and e-mail Recommendations

- Security is presently well-covered by CPPM/CPIC, but some support and training issues are addressed
  - Purchase site licenses for cybersecurity and make them part of the standard load [I]
  - CPPM/CPIC should develop e-mail and Web server cybersecurity [I]
  - CPPM should provide SW fixes for holes announced by them [I]
  - Provide advice for remote users [I]
  - CPPM should continue to provide annual refresher classes [I]
  - CPPM/CPIC should propose visitor laptop policy [I]
  - Qualified local sysadmins should take annual CPPM training [U]
- E-mail
  - Make the default browser selected by a mail reader customizable (IE or Netscape, for example) [I]

Side Issues

- During the course of our investigations, some issues were discovered that were outside the charter of the committee, but are reported for further investigation and development by the appropriate bodies: ITSD, CSAC, or ad-hoc committes.
  - Energy conservation standards. LBNL is a leader in this area, but no policy exists for computers
  - Consistent AV interface in AV-equipped rooms. How many times have you waited for an electronic presentation to be debugged?
  - Videoconferencing. This is a rapidly expanding area, particular in these times of travel caps, and standarization may be needed.
  - Remote Access. The level of support of off-site users is unclear. Many now work at home, campus, or on travel.

Reference Materials

- All presentations made before the committee will be available on a Web page.
- The URL for this source material is http://www.lbl.gov/ITSD/CSAC/CSC/csc_index.htm
- This material will be available shortly.

Conclusion

- We have come a long way from the Mac vs. PC exchange.
- The focus is now on the browser providing cross-platform compatibility of “lifeline” documents that all must have access to.
- We strove to “go out of the box”, and discovered areas of recommendations that were surprising even to committee members.
  - Applications more important than architecture
  - The procurement process does not reflect reality
  - Common file formats for document exchange important
  - Users, as well as ITSD, must participate in the decision process
- It is now up to CSAC, ITSD and the user community to assess these recommendations and decide which, if any, merit consideration. We hope that they result in improve quality of service to the LBNL user community.